

LESSON TITLE: TRAILER OPERATION**A. TRAINING OBJECTIVE**

- TASK:** Know the procedures to safely operate a vehicle with trailer.
- CONDITIONS:** Given instruction in a classroom.
- STANDARD:** Correctly answer verbal questions when called upon.

B. INTERMEDIATE TRAINING. None.**C. ADMINISTRATIVE INSTRUCTIONS**

1. Training time: Recommended instructional time is 0.5 hours.
2. Training location: Scheduled classroom.
3. Training type: Conference.
4. Students: Scheduled personnel.
5. Principal and assistant instructors required: One primary instructor for each class of 20 students.
6. Training aids and equipment: Overhead projector, transparencies, and screen.
7. References: FM 21-305, TC 21-305-8, and vehicle operator's (or owner's) manual.

D. SEQUENCE OF ACTIVITY**1. INTRODUCTION.**

- a. **Interest Device.** Many drivers tow boats, campers, or other kinds of trailers behind their passenger cars, vans, or pick-up trucks. Before any driver tows any one of these trailers, it is important to learn the special skills necessary for their operation.
- b. **Tie-in.** Regardless of how skillful you are with a vehicle, you must acquire new skills when hauling a trailer. The movements of a trailer depend almost entirely on the driver.

c. **Lesson Objective.**

ACTION: After this lesson the student will know the procedures to safely operate a vehicle with trailer.

CONDITIONS: Given instruction in a classroom.

STANDARD: Correctly answer verbal questions when called upon.

d. **Procedures.**

(1) *Explanation.*

(2) *Summary.*

2. **EXPLANATION.**

TRANSITION: If you have never hauled a trailer, have had limited experience, or are buying or renting an unfamiliar trailer, ask the dealer to demonstrate hitch attachment and maneuvering. Practice in a vacant parking lot and on a lightly traveled roadway before venturing into heavy traffic or onto a high speed highway. There are specific skills essential for safe operation in pulling a trailer.

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a. **General Driving Procedures.** When driving the towing vehicle and trailer, keep the overall length of the unit in mind when passing other vehicles and turning. Before operating a vehicle with trailer, always check towing connections to include safety chains for security and lights and brakes for proper operation. Safely towing a trailer requires increased concentration, alertness, and strict compliance with towing speeds.

(1) Trailers have a tendency to fishtail or swerve very easily when the driver makes an erratic movement of any magnitude. This can be caused by–

- Speed.
- A slight swerve to miss a pothole.
- A quick lane change.
- A slip of the hand on the steering wheel.
- Rough or uneven road.

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(2) To prevent trailer fishtail or swerve–

- Never exceed the recommended speed for the trailer that you are towing.
- Never exceed the trailer's maximum recommended weight capacity.
- Always slow down for curves, wet or rough roads, or downgrades.
- Anticipate all stops to take longer as a result of the added weight. Brake early and gently. Do not slam on the brakes.
- On downgrades, slow down before starting downhill. Use a lower gear. Let the engine compression help slow the vehicle.

(3) To correct trailer fishtail or swerve–

- Steer straight ahead.
- Gradually decelerate.
- Do not brake until both the towing vehicle and trailer have stabilized.

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b. **Starting.** Bear in mind that maneuverability and acceleration are greatly reduced with a trailer.

- Check traffic carefully and signal before moving.
- Allow a much greater gap before pulling into traffic.
- Start slowly and observe other traffic movement frequently in the mirrors.
- When accelerating from a stop, check both side mirrors to ensure the trailer is not overriding into an adjoining lane of traffic.

c. **Turning Corners.** Allow for the fact that the trailer wheels turn inside the turning radius of the towing vehicle.

(1) To make a right turn–

- Check traffic ahead, to the rear, and to the right side.
- If not in the right-hand lane, be sure that lane is clear, signal, and move into the lane well in advance of the turn.
- Signal for the turn at least 150 feet in advance and reduce speed.
- Check other traffic that is in, at, or approaching the intersection. (Be sure there is no bicycle or motorcycle to the right. Be especially alert for pedestrians.)
- Take a position farthest from the curb or edge of the pavement than you would if driving your car or light truck.

- Drive the towing vehicle straight ahead until the front wheels are well past the curb line (the position of the vehicle at the curb line depends on the length of the trailer). Then cut sharply to the right. This will keep the trailer wheels off the curb.
- During the turn, monitor the right mirror for off-tracking and proper vehicle clearance.
- Keep the vehicle close enough to the edge of the road or curb to prevent following vehicles from trying to pass on the right.
- If swinging wide to the left or oncoming lane, watch oncoming vehicles.
- After completing the turn, cancel the signal.
- When it is safe to do so, steer the vehicle into the desired lane (four-lane roads).

(2) To make a left turn–

- Check traffic ahead, to the rear, and to both sides.
- Signal for the turn at least 150 feet in advance and reduce speed.
- Check other traffic that is in, at, or approaching the intersection.
- Ensure there is an adequate gap to make a turn in front of traffic.
- Before turning, drive the towing vehicle into the center of the intersection to allow for the trailer.
- Turn hard to the left. Watch for oncoming traffic, if applicable.
- During the turn, monitor the mirrors for off-tracking.
- After completing the turn, cancel the signal.
- When it is safe to do so, steer the vehicle into the desired lane (four-lane roads).

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d. **Passing.** When executing this maneuver, allow much more distance because of the overall length and weight of the towed vehicle.

- Be sure there is ample, clear distance ahead.
- Check the blind spots to the left and right before starting.
- Turn gently, guard against sudden swerves that may cause the trailer to tilt or sway and possibly make you lose control.
- After passing, observe the overtaken vehicle in the rear-view mirror for clearance before you signal and move back into the right lane.

e. **Being Overtaken.** Your speed may be lower than that of other highway users.

(1) In the case of light vehicles, the situation is the same as when you are driving the car without a trailer.

- When a large vehicle overtakes you, the air it displaces will tend to push your trailer.
- Be aware of this possibility and be prepared to adjust steering to help maintain control.

(2) If you notice vehicles piling up behind you, the courteous thing to do is to find a place to stop and pull off the roadway so other vehicles may pass. Use the stop as an opportunity to recheck your connections and hitch.

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f. **Driving Around Curves.**

(1) On roads curving to the right, more distance must be allowed from the edge of the pavement, or the wheels of the trailer may drop to the shoulder, causing a dangerous sway and unnecessary tire wear. Keep toward the center line.

(2) On left turns, keep to the right to prevent the trailer from crossing the center line. Reducing speed before entering curves will provide better vehicle control.

g. **Slowing and Stopping.** Realize that stopping requires much more distance when pulling a trailer.

(1) If the trailer is not equipped with brakes, the entire unit (vehicle and trailer) must be stopped by the brakes on the towing vehicle.

(2) If the trailer is brake-equipped, then the application from the foot brake controls the trailer brake. (In some applications you have an electric brake on the trailer that is controlled by an electric switch mounted in the towing vehicle.)

(3) Practice before entering traffic to be sure the trailer brakes are adjusted to the load.

- Naturally, you must maintain a much greater following distance than usual.
- Planning ahead should lessen the need for sudden slow-downs or stops.
- Avoid high speed lanes on highways and allow for unfavorable road and weather conditions.

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h. Backing a Trailer. This maneuver causes the most difficulty for the new trailer operator. The most important thing to remember is to avoid backing if possible, even if you must go around the block to do so. However, you still must learn how to back.

(1) Get out of the vehicle and check the area to the sides, rear, underneath, and overhead for obstructions.

- Back slowly, turning the steering wheel to the right to go left and turning it to the left to go right.
- A useful technique is to turn the steering wheel in the proper direction and then straighten it – turn again and straighten as the trailer responds to the action of the vehicle.

(2) Two errors to avoid are turning the steering wheel too much and holding it in the turned position too long.

- Holding the steering wheel too long can cause the trailer and vehicle to jackknife.
- Holding the steering wheel at the bottom will help you better decide which direction to turn it.

(3) Whenever you back into a position where a turn is required, you will find it easier to back in such a way that the trailer turns toward the left side (sight side) of your vehicle so you can look over your left shoulder.

- This is much easier than negotiating the backing maneuver from the opposite direction, where the trailer turns toward the right side of the vehicle (blind side).
- This may mean going around the block to come down the street from the opposite direction to back into a driveway.

(4) Some people can back a trailer almost perfectly by using outside mirrors.

- Others find it helpful to open the vehicle door and look back.
- When mirrors do not show the action of the trailer, stick your head out the window to see.

(5) It will help if you have another person guide you as you back.

- Even an expert appreciates assistance in this difficult task.
- Practice is essential, particularly in developing the skill necessary to place the trailer in a parking space.

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i. **Laws and Regulations for Trailers.** The use of trailers, especially as it applies to registration, insurance, brake requirements, lights, reflectors, towing hitches, safety chains, speed, and weight and size limits, involve driver and owner responsibility. Make sure you check state regulations (and military) for any special requirements in each state where you travel.

j. **Care and Maintenance.** Since the vehicle (car, van, or pick-up) used for trailer hauling is performing a service for which it was not intended, extra care must be taken in its operation and maintenance.

(1) Radiators must be able to work at full capacity.

(2) Oil changes and proper chassis and running gear lubrication are needed more frequently.

(3) Tires carry a greater load than normal, so acceleration and braking will cause extra wear. Even heavier tires and added air pressure will not eliminate the problem entirely.

(4) Springs, shackles, and wheel bearings of the trailer need lubrication.

(5) Thorough inspection of the frame, hitch, and wheels should be made at regular specified intervals.

(6) Electricity from the vehicle battery operates additional trailer lights (stop, clearance, turn, and brake lights). In some cases, electrical brakes come from the vehicle battery. Therefore, it is essential the battery be fully charged.

3. SUMMARY.

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- a. **Recap Main Points.** Call on students to answer questions presented on Transparency 4-170.
- b. **Allow for Questions.**
- c. **Clarify Questions.**
- d. **Give Closing Statement.** Most vehicles towing trailers are longer, higher, and wider than passenger vehicles. They accelerate and stop much slower and require more room to turn. Remember – towing a trailer or boat requires special skill, as well as consideration on the part of each driver.

E. SAFETY RESTRICTIONS. None.

F. ADDITIONAL COMMENTS AND INFORMATION. None.